Academic Program Review

ACADEMIC YEAR		☐ Basic Skills ☐ Transfer ☒ Career Technical Education (CTE)
PROGRAM	Welding Technology	
DEPARTMENT	Industrial Technology	
DIVISION	Economic and Work Force Development	
SUBMITTER	Gonzalo Huerta (Adjunct Professor of Welding Technology	

I. INSTITUTIONAL GOALS

INSTITUTIONAL GOAL **1**	**INSTITUTIONAL MISSION AND EFFECTIVENESS** – The College will maintain programs and services that focus on the mission of the College supported by data-driven assessments to measure student learning and student success.
INSTITUTIONAL GOAL **2**	**STUDENT LEARNING PROGRAMS AND SERVICES** – The College will maintain instructional programs and services which support student success and the attainment of student educational goals.
INSTITUTIONAL GOAL **3**	**RESOURCES** – The College will develop and manage human, technological, physical, and financial resources to effectively support the College mission and the campus learning environment.
INSTITUTIONAL GOAL **4**	**LEADERSHIP AND GOVERNANCE** – The Board of Trustees and the Superintendent/President will establish policies that assure the quality, integrity, and effectiveness of student learning programs and services, and the financial stability of the institution.

II. PROGRAM GOALS

A. PAST – EVALUATION OF PREVIOUS CYCLE OBJECTIVES/PROGRAM GOALS (SET IN PREVIOUS YEAR)

List your previous objectives/goals and associated Institutional Goals. All program goals must address at least one of the institutional goals.

PAST PROGRAM GOALS (Describe past program goals.)	INSTITUTIONAL GOAL(S) (Check all that apply.)

1	PAST PROGRAM GOAL #1	INSTITUTIONAL GOAL(S)
	Identify Program Goal from Last Program Review: Hire a well-qualified and prepared Full-Time Teaching Professional	☒ 1 ☒ 2 ☒ 3 ☐ 4
	☐ Met ☐ Partially Met ☒ Not Met **Provide detail on any improvements/effectiveness and detail status on those not fully met:** The IVC Welding Technology Program continues to function without a Full-Time faculty member. For the past four (4) years the program has been staffed by four (4) Adjunct faculty members. There may be multiple contributing factors for not being able to fill the position that was vacated in June of 2010; (1) the IVC status of the fiscal resources may be a factor and may not support replacing the Full-Time Faculty member in Welding Technology, (2) the IVC prioritization process for Faculty Hiring has not favored the Welding Technology Full-Time Teaching position, and (3) There seems to be no change in status for the 2014-2015 academic year.	

2	PAST PROGRAM GOAL #2	INSTITUTIONAL GOAL(S)
	Identify Program Goal from Last Program Review: Certify the IVC Welding Technology Program to American Welding Society S.E.N.S.E. Standards (Schooling Excelling through National Skills Standards Education and implement the SENSE based curriculum.	☒ 1 ☒ 2 ☒ 3 ☐ 4
	☐ Met ☐ Partially Met ☒ Not Met **Provide detail on any improvements/effectiveness and detail status on those not fully met:** Not having a Full-Time faculty member to provide leadership, expertise, and full-time dedication of time and resources has limited the progress possible in completing the development of curriculum based on the American Welding Society Nationally Validated "Welding Personnel Training Profile" and the SENSE program standards. There is work being done on SENSE certification and curriculum development. SENSE certification application and audit for certification should be completed Spring 2014. The SENSE based curriculum should be approved for implementation during the 2014-2015 academic year. One example of necessary improvement if the status of a well-qualified Full-Time Professional remains the same is that 75% of the present Adjunct Faculty will need Professional Development to meet the teaching competencies required by the SENSE program. The accepted certification of IVC Welding Technology Faculty is to the American Welding Society standards for "CWE" (Certified Welding Educator). This would be an essential step toward implementation of the SENSE program.	

3	PAST PROGRAM GOAL #3	INSTITUTIONAL GOAL(S)
	Identify Program Goal from Last Program Review: Establish the Welding Technology Program in the new CTE Building (3100) by the Fall of 2014	☒ 1 ☒ 2 ☒ 3 ☐ 4
	☐ Met ☐ Partially Met ☒ Not Met	

	Provide detail on any improvements/effectiveness and detail status on those not fully met: The New Career Technical Education Building (3100) is still under construction and is due to be available for occupancy by the end of April 2014. The Welding Technology Program will "move" to the new CTE Building during the summer of 2014 and begin offering Welding Technology classes in the Fall of 2014.	

Comments: Many factors and activities need to be in place and completed to continue to have the IVC Welding Technology Program be of good quality, to be able to improve its offerings, and to expand the scope of its educational and training opportunities. Some of the essential Physical elements for Program improvement will be addressed by the new state-of-the-art Welding Technology Facilities and the new equipment in the new CTE Building. The Cognitive aspects and elements to the Welding Technology program will need to be addressed through Faculty Professional Development in order to raise the level of Educational/Instructional Input to the Student/Program. This should improve the Educational/Instructional Effectiveness which, in turn will provide for better Student Outcomes and Student Success. Other essential elements that need to be addressed include, but are not limited to;

(1) have the Welding Technology Program be under the leadership and guidance of a Full-Time Welding Technology Professional,
(2) have the Welding Technology Program be SENSE Certified,
(3) have the program be well established in the New CTE Building to provide for teaching and learning to SENSE standards,
(4) procure state-of-the-art welding technology equipment,
(5) expand the requirements for the Associates Degree and the Technical Certificate to include courses, such as;

a. Welding Fabrication
b. Industrial Technical Graphics and Technical Drawing
c. Industrial Maintenance and Repair
d. Electrical Fundamentals and Power Supplies, and
e. Industrial Safety (30 OSHA Standard).

B. PRESENT – DATA ANALYSIS AND PROGRAM HEALTH

1. Summarize and analyze all disaggregated data by day, evening, gender, ethnicity, and distance education regarding enrollments, fill rates, productivity, completion, success, retention, persistence, and transfer (complete a, b, & c). ***Attach graphs or trend data***.

   a. Discuss and chart the trends in enrollment and fill rate for each program by day and evening at the program level.

   ENROLLMENT TRENDS;
   The enrollment trends for Welding Technology are;
   1. Day fill rates average 101%
   2. Evening fill rates average 92%
   3. There are no on-line classes taught in Welding Technology.

   NOTE: Until the Spring of 2014, the CAP of eighteen (18) students per section for Welding Technology Classes has been "Limited" by and thus determined by (1) the SAFETY factor dictated by the present Welding Technology Teaching/Learning Lab/Classroom, (2) by the number of work/teaching stations available, and (3) by the combination lab/classroom layout to the facility. The new CTE Welding Technology Facility was planned for expansion to 24 work/teaching stations thus allowing for an increase of six (6) students per section.

   DAY/EVENING:
   For the 2010 (Fall) to 2013 (Spring) enrollment cycle, both DAY and EVENING Welding Technology classes have been FULL and in some cases have been over- enrolled. All present Welding Technology faculty members are willing to add students from the "Wait-Lists" and, for the most part, have accommodated "Crashers" during the first few days of any given semester.

   GENDER:

   For the 2010 (Fall) to 2013 (Spring) program review cycle, the Welding Technology Program was predominately enrolled by MALE students by the factor of (497 males to 15 Females). This represents three percent (3%) of students in Welding Technology at IVC are Female. Reported by the US Department of labor, two percent (2%) of welders in the USA are female. Though the percent at IVC is one percent (1%) above the national average, it is the goal of the IVC Welding Technology Program to increase the level of Female participation in the Welding Technology Program. The Carl D. Perkin's program supports efforts in addressing the "Gender Split" in careers and Welding Technology being a "Male Dominated Technical Field" there is a "Culture and Society Bias" against Females in Welding, but with appropriate attention toward this subject the "Gender Split" should be

reduced and more Females should benefit from the opportunities offered in Welding Technology.

ETHNICITY:

The "Reported" DATA for 2010 (Fall) to 2013 (Spring) by Ethnicity shows;

1. 66% of the total 520 students were……Hispanic……..……Success…… 64% …….. Retention…… 86%
2. 14% of the total 520 students were ……..Mexican……Success….. 58% …… Retention ….. 80%
3. 2% of the total 520 students were ……Other Hispanic……..Success…… 90% …… Retention…… 100%
4. 13% of the total 520 students were …… Unknown …… Success …. 71% ……Retention ….. 92%
5. 6% of the total 520 students were …….. White. …….. Success …. 87%..... Retention…… 90%

Observations;

1. Without having the entry "Academic Preparedness Levels" for the represented students, any conclusion reached based on the reported performance of any "Ethnic Group" would be speculation and assumption.
2. Having said that, the participation level (Enrollment) by Ethnic Group reflects, within a few percentage points, the Ethnicity of our Community. Therefore one may conclude that the Welding Technology Program represents the Ethnic Diversity of our Community.
3. The **Success** of Hispanics and Mexicans (Average 61%) as compared to Other Hispanics (Average 90%) is interesting. Not knowing the Academic backgrounds for these groups and not knowing the many contributing factors that lead to Academic Success, it is difficult to conclude what may account for the higher success rate for Other Hispanics (90%) VS. Hispanics and Mexicans (61%).

   NOTE: This may be an opportunity to have the Welding Technology Program better address the potential influencing factors leading to Success and address these through "adjustments and modifications" during the Teaching/Learning experience. These might include teaching strategies and modifications based on "Learning Intelligences", "Holistic Teaching/Learning", and "Cognitive, Affective, and Psychomotor Co-Dependence and Relationships." Also, in concert with other efforts, factor some of the essential learning strategies that might address any "Cultural and Linguistic Issues" that may influence "Success."

b. What are the trends in productivity? (WSCH/FTEF) The goal is 525 as per state guidelines. A low number means that we are below target levels for productivity. For example, in a small class that has a mandated cap of 15 students, the fill rate may be 100% but the productivity number (WSCH/FTEF) will be very low. A class with a cap of 40 students with a 100% fill rate will have a productivity number close to or above 525.

PRODUCTIVITY:

WSCH/FTEF for the 2010 (Fall) to 2013 (Spring) Program Review Cycle are reported to be;

a. Range from……. 255 (Fall 2012)…… to…… 341 (Spring 2011)…..for an ……..**Average 299.**
b. Full Time Equivalent Student (FTES) is consistent throughout (High 26.43) (Low 20.62) …….. **Average 22.14**
c. Full Time Equivalent Faculty (FTEF) is consistent throughout (High 2.6) (Low 2.33) …….. **Average 2.46**

NOTE:
The observation that needs to be the focus for assessing "Productivity" for the Welding Technology Program based on the ratio of WSCH/FTEF is that FTES is restricted by the number of Learning/Work Stations (18) and thus the base factor of for the State of 525 in not attainable. The additional factor which influences the outcome of WSCH/FTEF for the Welding Technology is that all of the program courses are high in "Lab Contact Hours" which increases the number of WSCH to Credit Hour Ratio.
Beginning the Fall of 2014, the "productivity" for the Welding Program should increase by a factor of 33% due to the additional Learning/Work Stations in the new CTE Welding Technology Facility.

c. Discuss and chart the success and retention rates by day, evening (extended day), and online classes in each program and identify gaps.

SUCCESS RATES:
The Data shows that on **Average Day Success Rates are…… 61%**
The Data shows that on **Average Evening Success rates are…… 71%**
OBSERVATION:
Success has many contributing factors.

1. It would be interesting to see the Data on "**Age" of Day Students VS Evening students.** This might lead to the conclusion that day students might be younger than evening students which might lead to the contributing factor of maturity, motivation, and dedication due to being older and more experienced.
2. Day students may tend to be Full-Time Students and student "Class/Credit Load" might contribute to the students' ability

to address the needs of all their classes.

3. Day time student may have full loads and might have part-time jobs which may influence their ability to dedicate enough time to their classes.
4. There is only one course in the Welding Technology Program that is offered both Day and Evening; WELD 100 Welding Technology. The Data for WELD 100 is the only data that can be directly compared and have any meaningful and/or significant outcome on which to base any conclusion leading to modifications and improvement.

   NOTE:

   The Success Rate for the Combined WELD 100 Sections was……. 50%

   The Completion Rate for the combined WELD Sections was…… 82%

   The reported data for the day WELD 100 and the Evening WELD 100 shows;

   SUCCESS rate for <u>Day</u> WELD 100 averaged……. 38.5%; RETENTION rate of……. 83.5%.....GPA 1.66

   SUCCESS rate for <u>Evening</u> WELD 100 averaged…….. 55%; RETENTION rate of …… 69.5% ……GPA 2.34

   <u>OBSERVATION:</u>

   1. Combined data for the same course (WELD 100) does not provide much for any meaningful analysis leading to modifications and improvement strategies.
   2. The data specific to DAY and EVENING is more telling and provides elements that can be useful for analysis and action for improvement.
      a. DAY students PERFORM at 38.5% SUCCESS compared to evening 55%; **DIFFERENCE of 16.5 percentage points**
         i. Is 16.5 percentage points significant? If yes, then contributing factors should be determined.
         ii. Are Evening students **better prepared** to meet the competencies of WELD 100? Analysis of ENTRY ACADEMIC LEVEL (Placement Test Scores) would be in order and might provide one contribution factor to this difference.
         iii. Are EVENING students more motivated than day students? Evening students might include “Returning” students that see a more immediate “VALUE” and/or “REWARD” to performing well in class and apply it to their job/work situation.
         iv. Are EVENING students more “MATURE” and therefore more dedicated to their education?
         v. Is there a difference in “RIGOR” between the Day and Evening class?

****** Further analysis with additional DATA will help answer some of the questions associated with the difference is SUCCESS between the day and Evening students in WELD 100.

3. RETENTION rate for day students is higher (83.5%) compared to Evening students (69.5%) a **DIFFERENCE of 16%**
    a. This is "inverted" to the SUCCESS Rate **(16.5%) Evening Higher** to RETENTION **(16%) Evening LOWER.**
4. GPA for **Evening is HIGHER (2.34)** with the **Day being LOWER (1.66)** representing a **difference of (.68).** Again, this difference may be as a result of some of the factors listed above, plus other factors yet to be determined.

COMMENT:

To complete a full analysis of "SUCCESS", more Data needs to be made available such as;

(1) Entry Academic Preparedness of each student,
(2) Rigor of the Day classes VS Evening Classes,
(3) Motivational factors Day VS Evening,
(4) Educational Goals for Day VS Evening students, and
(5) Factors that may impact performance such as; class load, job/work demands, etc.

Discuss and chart the success and retention rates in each program and identify gaps for five ethnic groups. (African-American, White, all Hispanics, Other, Unknown).

Please see (1.a ETHNICITY) above.

d. Discuss the trends in the number of degrees or certificates awarded, if applicable. (You may be able to expand more about this in B.3 below.)

During this Program Review Cycle there were three **degrees awarded (3)** and there were twenty **Technical Certificates awarded (20).**

OBSERVATION:

1. Prior to the Fall of 2013 Welding Technology did not have a sequence of course work that was based on have Pre-Requisites which allowed students to enroll in and complete only the one or two Welding courses that best met their immediate needs. This would allow students to enroll in any courses complete that course, apply to a job situation what was learned, and not continue the Welding Program to completion.
2. As of Fall 2013, the Welding Technology Program has implemented a Sequence of Course Work based on Pre-Requisites which will now allow students to complete more of the Welding Technology Program and will encourage them to complete

all required course work for the Technical Certificate and/or the Associates Degree.

3. The Welding Technology Program needs to continue to promote the "Culture" of completing the Welding Technology Program with the end objective being the Technical Certificate and/or the Associates Degree
4. In part, it is the function of Welding Technology faculty to "Promote" the Degree and the Certificate and the Faculty should be "Advisors" well informed of the "Requirements" for complete and thus become "Class Room Advisors."

e. What program changes, if any, will you recommend that you expect would have a positive effect on your students in your program, if applicable?

1. Changes recommended within the Welding Technology Program are essentially those changes **"Pointed out" by the data**.
2. If one were to truly conduct an analysis of the provided DATA plus other DATA needed to determine necessary changes, it would be possible to **truly propose influencing elements and factors** that would drive **change for improvement.**
3. Once **contributing and influencing elements and factors** were identified, one could plan for meaningful change that would produce POSITIVE change in the reportable data elements and would improve student performance and student outcomes.
4. Change in Curriculum will come with the true **implementation of SENSE**. The Cognitive and Academic Skills will improve.
5. Change will come in Manipulative and Psychomotor skills with the new **state-of-the-art equipment** in the new CTE Lab.
6. Change will come with the addition of the proposed Welding Technology courses because of the expanded and much **improved Teaching and Learning Welding Technology Lab** in the New CTE Building.
7. Change will come as a result of Welding Technology Facu**lty being certified to AWS Certified Welding Educator Standards.**

2. Summarize revisions, additions, deletions, or alternate delivery methods to courses and/or program based on the last program review.

3. Evaluate the program's viability by addressing program completion, size (FTES), projections (growing/stable/declining), and quality of outcomes. For CTE programs, also include labor market projections, placement, and performance on external testing/exams (i.e. ASE, NABCEP) and industry-recognized credentials, placement, and performance on external testing or exams (NCLEX, ASC, NAP).

1. FTES of the Welding Technology Program is at capacity based on present CAP for the courses offered.
2. FTES will increase as of the Fall 2014 due to the addition of Teaching/Learning Workstations in the new CTE Lab.
3. Successful Students will be "Certified" to AWS SENSE Standards.

C. FUTURE – LIST OF "SMART" (SPECIFIC MEASURABLE ATTAINABLE RELEVANT TIME-LIMITED) PROGRAM OBJECTIVES FOR NEXT ACADEMIC YEAR TO ADDRESS PROGRAM IMPROVEMENT, GROWTH, OR UNMET NEEDS/GOALS. ALL PROGRAM GOALS MUST ADDRESS AT LEAST ONE OF THE INSTITUTIONAL GOALS.

FUTURE PROGRAM GOALS (Describe future program goals. List in order of budget priority.)	INSTITUTIONAL GOAL(S) (Check all that apply.)

1	FUTURE PROGRAM GOAL #1 Budget Priority #1	INSTITUTIONAL GOAL(S)
Identify Goal: Establish the modified Welding Technology curriculum based on AWS SENSE Standards		☒ 1 ☒ 2 ☒ 3 ☐ 4
Objective: During the 2014-2015 the Welding Technology Program will have the modified Curriculum approved locally and by the American Welding Society and ready for full implementation for Fall 2015.		
Task(s): 1. Develop the curriculum, 2. Submit for approval, 3. Provide for Professional Development of Faculty to the SENSE curriculum, and 4 Establish the necessary support system to follow protocol in SENSE.		
Timeline: 2014-2015		

EXPENSE TYPE	FUNDING TYPE		RESOURCE PLAN (Check all that apply.)	BUDGET REQUEST
☒ One-Time ☐ Recurring	☒ Categorical Specify: Perkins	☐ General Fund	☐ Facilities ☐ Marketing ☐ Technology ☒ Professional Development ☒ Staffing	$$8,000

2	FUTURE PROGRAM GOAL #2 Budget Priority #2	INSTITUTIONAL GOAL(S)
Identify Goal: Establish the Welding Technology Program in the new CTE Building		☒ 1 ☒ 2 ☒ 3 ☐ 4
Objective: To have the equipment, tool, and Teaching/Learning workstations fully operational for all Welding Technology Classes.		
Task(s): 1. Identify tools and equipment to be transferred to the new CTE Lab, 2. Submit Equipment Specifications for the equipment to be procured for the new CTE Lab, 3. Install all new equipment, 4. Set-up Teaching/Learning environment in the new CTE Lab. and 5. Provide for Instructional Supplies to be ready for Taeching/Learning activities.		
Timeline: August 2014		

EXPENSE TYPE	FUNDING TYPE		RESOURCE PLAN (Check all that apply.)	BUDGET REQUEST
☒ One-Time ☐ Recurring	☒ Categorical Specify: Perkins	☒ General Fund	☒ Facilities ☐ Marketing ☒ Technology ☒ Professional Development ☒ Staffing	$30000

3	**FUTURE PROGRAM GOAL #3** Budget Priority #3	**INSTITUTIONAL GOAL(S)**
Identify Goal: Hire a Well Qualified Welding Technology Teaching Professional		☒ 1 ☒ 2 ☒ 3 ☐ 4
Objective: To promote and hire a Full-Time Welding Technology Professor.		
Task(s): Request the position		
Timeline: 2014-2015		

EXPENSE TYPE	**FUNDING TYPE**		**RESOURCE PLAN** (Check all that apply.)	**BUDGET REQUEST**
☐ One-Time ☒ Recurring	☐ Categorical Specify:	☒ General Fund	☐ Facilities ☐ Marketing ☐ Technology ☐ Professional Development ☒ Staffing	$? 85K_____

TOTAL BUDGET REQUEST	135000

1. How will your enhanced budget request improve student success?

Comments:

III. INSTITUTIONAL STUDENT LEARNING OUTCOMES (ISLOs)

ISLO 1	COMMUNICATION SKILLS
ISLO 2	CRITICAL THINKING SKILLS
ISLO 3	PERSONAL RESPONSIBILITY
ISLO 4	INFORMATION LITERACY
ISLO 5	GLOBAL AWARENESS

IV. PROGRAM LEARNING OUTCOMES (PLOs)

PROGRAM LEARNING OUTCOMES (Describe learning outcomes.)	**ISLO(S)** [Link PLO to appropriate ISLO(s).]

PLO 1	**PROGRAM LEARNING OUTCOME #1**	**ISLO(S)**
	Identify Program Outcome:	☐ ISLO 1 ☐ ISLO 2 ☐ ISLO 3 ☐ ISLO 4 ☐ ISLO 5
	Measurable Outcome Summary:	
	☐ Met ☐ Partially Met ☐ Not Met **Provide detail on any improvements/effectiveness and detail status on those not fully met:**	

PLO 2	PROGRAM LEARNING OUTCOME #2	ISLO(S)
	Identify Program Outcome:	☐ ISLO 1 ☐ ISLO 2 ☐ ISLO 3 ☐ ISLO 4 ☐ ISLO 5
	Measurable Outcome Summary:	
	☐ Met ☐ Partially Met ☐ Not Met **Provide detail on any improvements/effectiveness and detail status on those not fully met:**	

PLO 3	PROGRAM LEARNING OUTCOME #3	ISLO(S)
	Identify Program Outcome:	☐ ISLO 1 ☐ ISLO 2 ☐ ISLO 3 ☐ ISLO 4 ☐ ISLO 5
	Measurable Outcome Summary:	
	☐ Met ☐ Partially Met ☐ Not Met **Provide detail on any improvements/effectiveness and detail status on those not fully met:**	

***** ATTACH PLO/SLO GRID *****